

# **Survival Math**

## **Travel Agent Contest**

## **Smart Shopper Marathon**

## **Hot Dog Stand**

## **Foreman's Assistant**



**TEACHER'S  
SUPPORT  
BOOKLET**

**SUNBURST**  
**COMMUNICATIONS**

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SURVIVAL MATH  
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## INTRODUCTION

Survival Math, a set of four computer programs that simulate realistic situations, is designed to motivate students in grades 7-12 to become actively involved in developing their skills in mathematical computation.

Each program--TRAVEL AGENT CONTEST, SMART SHOPPER MARATHON, HOT DOG STAND, and FOREMAN'S ASSISTANT--utilizes the computer's ability to randomly generate problems and events. Thus the same student, or a group of students, can use the same program over and over again. In addition, competition with oneself, teamwork, and competition with others are incorporated into each program.

TRAVEL AGENT CONTEST and SMART SHOPPER MARATHON are the least difficult of the four programs. In TRAVEL AGENT CONTEST students work within a given budget to plan a trip to Lake Geneva. In SMART SHOPPER MARATHON students are timed as they use different estimation skills to select the best purchases in a supermarket.

Both HOT DOG STAND and FOREMAN'S ASSISTANT make good team projects. HOT DOG STAND requires planning and record keeping to make as much money as possible while managing a hot dog stand. The random situations introduced make the simulation unique each time it is used. In FOREMAN'S ASSISTANT, the most difficult program, students must be able to convert units of measure, work with area and perimeter, and construct a room from the information provided. Accuracy in calculation is essential.

The programs are designed for a 32K Apple with diskette, a 16K TRS-80 Model I or Model III cassette system, a 32K TRS-80 Modell III with diskette, a 16K Atari 400 or 800 with diskette, or a Commodore 64 with diskette. If you need assistance in operating your computer, check the section of this guide entitled APPLE II PLUS, TRS-80, Atari, or Commodore 64--WORKING WITH THE COMPUTER, or call Sunburst toll-free at 800-431-1934.

MATHEMATICAL SKILLS NEEDED

Whole Numbers

Adding two- and three-digit numbers with regrouping

Multiplying a one-digit number by a two-digit number

Dividing one- through four-digit numbers by one- and two-digit numbers

Whole Numbers -- Estimation

Estimating the product of a one-digit number times a one- or two-digit number

Decimals

Adding dollars and cents to dollars and cents

Subtracting dollars and cents from dollars and cents

Multiplying dollars and cents by a whole number

Decimals -- Estimation

Estimating the difference between two decimals

Estimating the product of two decimals

Estimating the quotient of two decimals

Percent -- Estimation

Estimating a fraction as a percent

Measurement/Areas/Units

Applying the perimeter and area formulas for a rectangle

Converting square inches to square feet

Converting dozens to units, cases to units

	TRAVEL AGENT	SMART SHOPPER	HOT DOG STAND	FOREMAN'S ASSISTANT
Adding two- and three-digit numbers with regrouping			x	
Multiplying a one-digit number by a two-digit number			x	
Dividing one- through four-digit numbers by one- and two-digit numbers			x	
Estimating the product of a one-digit number times a one- or two-digit number		x		
Adding dollars and cents to dollars and cents	x		x	
Subtracting dollars and cents from dollars and cents	x		x	
Multiplying dollars and cents by a whole number	x		x	
Estimating the difference between two decimals		x		
Estimating the product of two decimals		x		
Estimating the quotient of two decimals		x		
Estimating a fraction as a percent		x		
Applying the perimeter and area formulas for a rectangle			x	
Converting square inches to square feet			x	
Converting dozens to units, cases to units		x		

YOUR EXPENSE GOAL IS \$1225.

YOUR PLANNED EXPENSES FOR THE TRIP ARE:

TRANSPORTATION	\$ 342.00
MEALS WHILE TRAVELING	\$ 0.00
LODGING	\$ 96.00
MEALS	\$ 65.85
SPECIAL EVENTS	\$ 0.00
 TOTAL	 \$ 503.85

PRESS THE S-KEY TO START  
THIS PLAN AGAIN.

OR

PRESS THE P-KEY TO PLAN  
EXPENSES FOR SPECIAL EVENTS.

Skills: addition, subtraction, multiplication  
money/decimals  
estimation

Students Work With: travel fares  
motel rates  
meals and rates  
ticket prices  
budget

Grade Level: 7-12

Reading Level: 7th grade (Fry Test)

Time Required: 5 - 10 minutes for one plan

Objectives:

1. to provide students with practice in planning a course of action within a budget.
2. to provide students with practice in adding and subtracting decimal numbers.
3. to provide students with practice in multiplying whole numbers by decimals.
4. to develop students' skills in estimating.

## TRAVEL AGENT CONTEST

### Program Description

Students enter a "contest" for travel agents by planning a seven day and six night trip without exceeding a given limit for expenses. The contest is judged on the basis of who comes closest to spending the limit for the trip without going over that limit.

When planning the trip, students must consider expenses for travel, lodging, food, and entertainment. For example, travel can be by plane, bus, or train. After selecting one of these options, students must calculate and enter the exact cost of that option from the information given.

When students enter a cost, the entry is identified as too high, too low, or correct. If not correct, the same cost is again requested.

Each time the program is run, the computer creates different values for many variables, hence students are challenged even after repeated use of the program.

As students make decisions, they have the option of starting over on the same trip (i.e., all the same values). Students should use this option whenever they discover that they have made incorrect decisions before they finish planning their trip.

The limit the students are given to spend varies with each run of the program. Also the dollar values of the different options vary. Students will be able to choose:

Transportation: Students choose travel by bus, train, or airplane. Some meals may be included in the transportation prices and thus save money later. The students must calculate the round trip fare based on the one-way figures provided.

Meals while traveling: This option occurs only when certain transportation options are chosen. The students must choose the type of meals desired and calculate the cost for the number of days involved.

Lodging: Three different lodging options are provided. Some include meals. The students choose the option and calculate the total bill for the number of nights involved.

Meals: Students choose the type of restaurant (from inexpensive to expensive), the type of meal (breakfast, lunch, or dinner), and the number of meals. They will continue on the meal option until all meals are accounted for.

Special Events: Three events are listed for evening entertainment in Lake Geneva. Prices differ for all three and cost of tickets differs within an option. Students also have the option of planning for the "customer" to entertain a friend, which will double the price of the tickets.

## TRAVEL AGENT CONTEST

### Classroom Use:

This simulation is the easiest of the Survival Math programs. Advise students that the "start over" option does not change any values involved in decisions. One very good way for students to plan is to make all decisions, thereby seeing all of the values, then start over with the advantage of knowing these values.

While working through the program, students will need to use pencil and paper or the Travel Agent Worksheet.

This program can be used by individual students as well as by groups of two or three students. If groups are formed, be sure all students become involved in completing the calculations.

Since the game aspect of the program involves students competing for scores, more than one student might want to run the program in succession.



TRAVEL AGENT WORKSHEET

Coast to Coast Travel Agency

My limit is \_\_\_\_\_.

My expenditures are:

Transportation (round trip)  
type of transportation: \_\_\_\_\_ Cost: \_\_\_\_\_

Meals while traveling  
number of meals: \_\_\_\_\_ Cost: \_\_\_\_\_

Lodging  
type of lodging: \_\_\_\_\_ Cost: \_\_\_\_\_

Total: \_\_\_\_\_

Meals

number of meals left to plan for: \_\_\_\_\_

<u>Breakfast</u>	<u>Lunch</u>	<u>Dinner</u>
------------------	--------------	---------------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Total: \_\_\_\_\_

Special Events

number of nights \_\_\_\_\_

Event \_\_\_\_\_ Cost \_\_\_\_\_

Event \_\_\_\_\_ Cost \_\_\_\_\_

Event \_\_\_\_\_ Cost \_\_\_\_\_

Total: \_\_\_\_\_

GRAND TOTAL: \_\_\_\_\_

TIME LEFT: 27  
SCORE: 9

1) 6 FOR 1.61 LBS. OF COFFEE

2) 5 FOR 1.98 LBS. OF COFFEE

WHICH LINE SHOWS THE LOWER TOTAL PRICE?

- Skills: addition, subtraction, multiplication, division  
money/decimals  
percentages  
measurement  
estimation
- Students Work With: unit pricing  
weight  
discounts
- Grade Level: 7-12
- Reading Level: 5th grade (Fry Test)
- Time Required: 7 - 10 minutes for a single session
- Objectives:
1. to provide students with a realistic setting in which to practice mathematics skills.
  2. to drill students on estimation skills involving:
    - dividing a decimal by a whole number
    - multiplying two single-digit whole numbers
    - subtracting decimals to two places
    - division of two decimals
    - multiplying a whole number times a decimal.

Program Description:

Students are "contestants" in the "Smart Shopper Marathon." There are five aisles in the supermarket, and students must make the best purchases according to instructions given at the beginning of each aisle. The final score is a function of both accuracy and speed.

Each time this program is used, the order of the aisles is different. Similarly, the prices of the items in each aisle are also different. However, each item is always realistically priced.

Students are given sixty clock ticks (not necessarily seconds) to complete each aisle. One point is scored for each correct answer, and there is a ten-tick penalty for each incorrect answer. A five-point bonus is given for reaching the end of an aisle. This is done by answering twenty-five questions before all sixty ticks have elapsed. There is no penalty for not completing an aisle.

Each aisle contains twenty-five displays. Each aisle requires the student to use a different skill for deciding on the best purchases. At each display the student must use the skill required by that aisle to determine the correct answer.

Skills by Aisle

Aisle 1 -- lower unit price

Skill: estimation of division of a decimal by a whole number

Example:

- 1) pay \$ .60 for 2 bars of soap
  - 2) pay \$1.10 for 3 bars of soap
- Which line has a lower unit price?

Aisle 2 -- greater total weight

Skill: estimation of the product of two whole numbers

Example:

- 1) Five 6 oz. jars of jelly
  - 2) Three 7 oz. cans of tuna
- Which line shows the greater total weight?

Aisle 3 -- bigger dollar savings

Skill: estimation of difference of two decimal numbers

Example:

- |    | <u>Sale</u> | <u>Regular</u> |                   |
|----|-------------|----------------|-------------------|
| 1) | 3.15        | 3.80           | for a garden hose |
| 2) | 2.95        | 3.50           | for a fire alarm  |
- Which line has the bigger dollar savings?

## SMART SHOPPER MARATHON

Aisle 4 -- larger percent savings

Skill: estimation of a difference of two decimals and then division of the decimals

Example:

	<u>Regular</u>	<u>Sale</u>	
1)	24.30	12.00	for footballs
2)	20.40	10.00	for soccer balls
Which line has the largest percent savings?			

Aisle 5 -- lower total price

Skill: estimation of the product of a whole number and a decimal

Example:

- 1) Six for \$3.03 bottles of multi-vitamins
  - 2) Two for \$7.00 bottles of vitamin E
- Which line has the lower total price?

### Classroom Use:

A perfect score of 150 (twenty-five points plus a five point bonus in each aisle) is very difficult to achieve. Students should be encouraged to work at improving their own scores rather than judging their success by reaching 150.

Encourage students to carefully estimate, rather than calculate, exact values. Those who compute exact answers will achieve very low scores. Finding exact answers will take too long and incorrect guesses result in time penalties.

The program can be used by students who have most but not all of the necessary skills. If, for example, they are in Aisle 4 but cannot yet calculate percent, they can guess rather than not use the simulation.

If possible, encourage students to use this program individually. Because time and accuracy play an important role, more than one user is likely to result in nonproductive conflict.

Calculating the sum of the scores of all students in a class both before and after classroom work on one of the skills is one way to measure the success of that classroom work.

----- H O T   D O G   S T A N D -----

TODAY'S GAME IS OVER.   YOUR STAND SOLD:

48 HOT DOGS            AT \$ .75 FOR A  
                         TOTAL OF \$ 36.00

192 CANS OF SODA    AT \$ .50 FOR A  
                         TOTAL OF \$ 96.00

251 BAGS OF CHIPS AT \$ .40 FOR A  
                         TOTAL OF \$ 100.40

TOTAL SALES WERE \$ 232.40

BANK BALANCE WAS    \$    4.97  
NEW BANK BALANCE IS   \$   237.37

PRESS THE C-KEY TO CONTINUE.

Skills:

addition, subtraction, multiplication, division  
money  
estimation  
planning

Students Work With:

unit pricing  
price setting  
profit and loss  
inventory

Grade Level:

7 - 12

Reading Level:

5th grade (Fry Test)

Time Required:

10 - 40 minutes for a single session

Objectives:

1. to provide students with practice in planning expenses.
2. to provide students with practice in dealing with a situation in which random events influence the outcome.
3. to provide students with practice in:
  - adding and subtracting decimals
  - multiplying decimals by whole numbers.

Program Description

Students "operate" a hot dog stand at eight football games. Before each game, students can elect to purchase hot dogs, buns, soda, chips, and courtesy kits (napkin, mustard, relish,...). Three different qualities or unit prices are always available. On the day of the game, students must set the sales price of hot dogs (including hot dog, bun, and courtesy kit), sodas, and chips.

Students begin this simulation with \$200. The suggested objective is to have \$2,500 by the end of the football season.

Several variables have been used to make this a realistic simulation. Students need to consider all of the following when making their decisions.

- The stands can hold no more than 1000 fans.
2. Hot dogs cannot be sold without buns, or vice versa.
3. Customers expect courtesy kits when they purchase hot dogs. If courtesy kits are not available, the sale of hot dogs will be greatly reduced.
4. Hot dogs and buns not sold each week are lost. Chips, soda, and courtesy kits can be saved and used at subsequent games.
5. Any items unsold after the last game are lost.
6. The size of the crowd has a direct effect on sales.  
Crowd size is affected by:
  - a. weather
  - b. type of game -- preseason (smaller crowd) to homecoming (larger crowd)
  - c. time of day -- evening games have larger crowds
  - d. day of week -- Saturday crowds are larger than Friday crowds
7. Pricing has a direct effect on sales. Overpriced items sell poorly while bargains sell very well.
8. Students should assume that all variables interact in a realistic fashion. For example, given the same size crowd, more soda can be sold on a sunny day than on a rainy day.

This simulation will produce different football schedules, different unit pricing, and hence very different results each time it is used. Success on one run does not assure the same result on subsequent runs.

Classroom Use

This simulation can be very effective when used by a group of two to six students. In general, a small group will discuss more of the variables that can affect each decision, and such a consideration of those variables is an important aspect of the simulation.

The suggested goal of \$2,500 is ambitious. Students should be encouraged to measure their present performance against their past performance and those of other groups, rather than against an arbitrary goal.

Encourage students to analyze the results of each day's sales. Why did one or more items sell especially well or especially poorly?

The Hot Dog Stand Worksheet can be used to record results so students can analyze past decisions.

# HOT DOG STAND WORKSHEET

Game 1: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Income
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Game 2: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Income
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_



# Hot Dog Stand Worksheet (Page 2)

Game 3: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Game 4: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Game 5: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Hot Dog Stand Worksheet (Page 3)

Game 6: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
 Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Game 7: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
 Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

Game 8: Day \_\_\_\_\_ Weather Forecast \_\_\_\_\_  
 Bank Balance \_\_\_\_\_

	On hand	Purchased	Total Cost	Cost per item	Price Charged	Sold	Total Price
Hot Dogs		Dozen					
Buns		Dozen					
Soda		Cases					
Chips		Bags					
Courtesy Kits		Kits					

Total Expenditures \_\_\_\_\_

TOTAL SPENT ON EXTRA MATERIAL \$ 0.00  
WORKING DAYS LEFT: 30

YOU MUST BUILD FOUR WALLS OF A PLAYROOM.  
ALONG EACH WALL YOU MUST PLACE VERTICAL  
SUPPORTS NO MORE THAN 16 INCHES APART.  
CORNERS WILL HAVE TWO SUPPORTS. ROOM  
DIMENSIONS ARE 14 FEET BY 25 FEET.

HOW MANY SUPPORTS ARE NEEDED FOR ALL  
FOUR WALLS? 64

THAT'S RIGHT.

PRESS THE C-KEY TO CONTINUE.

- Skills:** addition, subtraction, multiplication, division  
money/decimals  
measurement  
estimations  
fractions
- Students Work With:** measurement conversion  
area  
construction techniques  
measurement of materials
- Grade Level:** 7 - 12
- Reading Level:** 6th grade (Fry Test)
- Time Required:** 10 - 20 minutes
- Objectives:**
1. to provide students with practice in:
    - converting inches to feet and feet to inches
    - division of decimal numbers by whole numbers
    - multiplication of whole numbers and decimals
    - addition and subtraction of whole numbers and decimals.
  2. to provide students with practice in working with schematic drawings.
  3. to provide students with practice in applying formulas for perimeters and areas.

Program Description

Students play the role of a construction foreman's assistant. Their job is to estimate the amount of material needed to finish six different tasks. The job must be done within thirty working days and without spending more than \$50 for materials that will not be used.

The six tasks are the major tasks that might be faced when building a playroom. More specifically, they are:

1. Given the dimensions (in feet) of a playroom, calculate the number of vertical supports needed if the supports are to be no more than 16 inches apart and there are two supports in each corner.
2. Calculate how many 4 by 8 foot wall panels are needed to finish the walls of the same playroom.
3. Given the dimensions (in inches) of a single brick, calculate the number of bricks needed to cover a short wall of the same playroom.
4. Given the number of square feet covered by a gallon of paint, calculate how much paint is needed to put two coats on three walls and the ceiling of the room.
5. If one of the short playroom walls is to be covered with bookshelves spaced 14 inches apart, calculate how many feet of shelf stock are needed.
6. Calculate how many 9-inch square tiles are needed to cover the playroom floor.

After each task is described, the student must estimate the quantity of material needed. Only estimates equal to or greater than the materials actually needed are acceptable. Estimates of insufficient material must be redone. Estimates that are too high are accepted, but the cost of material that can't be used is charged against the \$50 limit.

After each of the estimates is made, the student must calculate the exact price of the material. If the calculation is incorrect, a too high or too low indication is given, and the calculation must be reentered.

All entries affect the number of working days. An acceptable materials estimate consumes two days. An unacceptable materials estimate consumes four days since this results in employees with nothing to do. All cost entries, right or wrong, consume one day.

Classroom Use:

This is the most difficult of the Survival Math programs. Students should have pencil and paper available. A calculator may also be used.

Remind students to remember the dimensions of the room. Although they are reminded within the program, forgetting the dimensions will prevent them from completing their tasks successfully.

Although one can develop formulas for each of the material estimates, this is not the intent of the simulation. Students should complete their estimate using only formulas that are self-generated. Most will use a variety of techniques without developing a formula.

This program should be used by groups of three or four students at a time. Because the materials calculations must be carefully done, all members of the group should do them and then compare answers prior to data entry. Students should be encouraged to determine why an answer is incorrect.

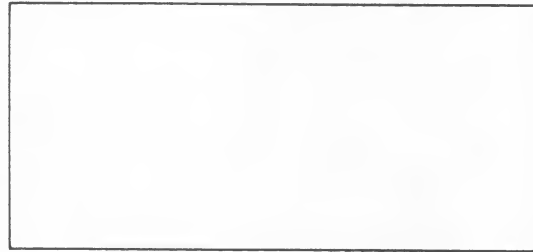
The Foreman's Assistant Worksheet can be used as a guide for students who are having difficulty.

FOREMAN'S ASSISTANT WORKSHEET

YOU MUST COMPLETE THE CONSTRUCTION IN 30 DAYS!

Dimensions of the room are: \_\_\_\_\_ x \_\_\_\_\_

Decision 1: Number of Vertical Supports



Vertical Supports are 16 inches apart and two are in each corner.

- \_\_\_\_\_ Number of supports needed for length  
\_\_\_\_\_ Number of supports needed for width  
\_\_\_\_\_ Number of supports for perimeter plus corners  
\_\_\_\_\_ Total supports

Decision 2: Number of Panels

- \_\_\_\_\_ Number of panels for the length  
\_\_\_\_\_ Number of panels for the width  
\_\_\_\_\_ Total panels

Decision 3: Number of Bricks

- \_\_\_\_\_ Number of bricks in one row  
\_\_\_\_\_ Number of rows  
\_\_\_\_\_ Total bricks

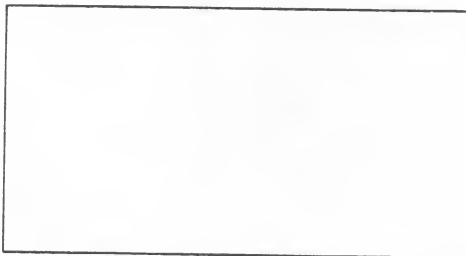
FOREMAN'S ASSISTANT WORKSHEET (Page 2)

Decision 4: Amount of Paint

- \_\_\_\_\_ Square feet in ceiling
- \_\_\_\_\_ Square feet in length of room
- \_\_\_\_\_ Square feet in width of room
- \_\_\_\_\_ Total square feet in room and ceiling
- \_\_\_\_\_ Square feet per gallon
- \_\_\_\_\_ Total gallons of paint

Decision 5: Number of Boards

Sketch the bookcase:



- \_\_\_\_\_ Number of boards for one length
- \_\_\_\_\_ Number of lengths
- \_\_\_\_\_ Total boards

Decision 6: Number of Tiles

- \_\_\_\_\_ Tiles for one length of the room
- \_\_\_\_\_ Tiles for one width of the room
- \_\_\_\_\_ Total tiles

## APPLE II PLUS: WORKING WITH THE COMPUTER

- (1) Turn on the television or monitor.
- (2) Insert the diskette into the disk drive with the label facing up and on the right.
- (3) Close the door to the disk drive.
- (4) Turn on the Apple II. (The on-off switch is on the back left side of the computer.)
- (5) You will see a red light on the disk drive turn on. If the disk drive light does not turn off in about 10 seconds, turn the Apple off and make sure your diskette is placed correctly in the disk drive.
- (6) SUNBURST will appear on the screen with the diskette name. When the menu appears, choose the program you want. If in doubt, type D and get a description of the program. Type the number in front of the program name to select the program. Press RETURN after your selection.
- (7) Follow directions given in the program.

### Shutting Off the System:

- (1) Remove the diskette from the disk drive and return it to its place of storage.
- (2) Turn off the Apple.
- (3) Turn off the television or monitor.



### TRS-80: WORKING WITH THE COMPUTER (cassette)

- (1) Turn on the video display if it is separate from the computer.
- (2) Turn on the computer. If your TRS-80 has a disk drive, hold the BREAK key down while you turn on the computer. If you have a Model III TRS-80, type L and press ENTER when the computer asks "CASS?".
- (3) Choose the tape you wish to use.
- (4) Insert the tape in the tape recorder (the label of the program you want should be facing up).
- (5) Make sure the tape is rewound.
- (6) Press the PLAY button on the tape recorder.
- (7) Type CLOAD and press the ENTER key. (This starts the tape recorder.)
- (8) Two stars (\*\*) will appear and blink on the top line of the screen. This indicates the program is loading.

If you don't see two stars (one star should be blinking) in the upper right-hand corner in about 30 seconds--

- reset the computer (see How to Reset the Computer);
- check the volume control (it should be set between 6 and 8);
- make sure all the plugs are in place; and
- try again, starting at Step 4.

- (9) When READY appears on the screen, press REWIND. Return the tape to its box. The program is now loaded into the computer's memory.
- (10) Type RUN and press ENTER.
- (11) Follow instructions that appear on the screen.

#### How to Reset the Computer:

When you press the RESET button, it resets the computer without erasing the memory. With the Model I (separate keyboard and monitor), the RESET button is located at the left rear of the keyboard (inside of a small door).

The Model III is reset by the BREAK key (on the keyboard). When you reset the computer, the word READY will appear on the screen. You are now back in control and can run the program again. Type RUN and press ENTER, or load a new program from tape.

#### Shutting off the System

- (1) Turn off the video display if it is separate from the computer.
- (2) Turn off the computer.

### TRS-80: WORKING WITH THE COMPUTER (diskette)

- 1) Insert the diskette into the disk drive with the label facing up and on the right.
- 2) Close the door to the drive.
- 3) Turn on the computer.
- 4) You will see a red light on the disk drive light up. If the disk drive does not turn off in about 25 seconds, turn off the TRS-80 and make sure the diskette is placed correctly in the disk drive.
- 5) Choose the program you want from the menu.
- 6) If at any time during the programs you want to stop, hold the SHIFT Key and the down-arrow Key and press the E Key. You will be returned to the main menu.

### Shutting Off The Computer

- 1) Remove the diskette from the disk drive and return it to its place of storage.
- 2) Turn off the TRS-80.

## ATARI: WORKING WITH THE COMPUTER

- 1) Turn on the television or monitor
- 2) The disk drive must be turned on before the computer. Turn on the disk drive using the switch on the front, two lights will come on, the "PWR ON" light and the disk "BUSY" light. After about 10 seconds the BUSY light should go off.
- 3) Press the rectangular release button below the disk drive door and the door will open. Insert a diskette with the exposed oval "window" inserted first and the label up.
- 4) Close the door on the disk drive.
- 5) Turn on the Atari computer.
- 6) A SUNBURST will appear and then a listing of available programs. Select the program you want and press the RETURN key.
- 7) If you want to stop the program, hold the Control key and press the E key. You will be returned to the main menu.

### Shutting Off The System

- 1) Remove the diskette.
- 2) Turn off the disk drive, television, and Atari.

## COMMODORE 64: WORKING WITH THE COMPUTER

- 1) Turn on the television or monitor.
- 2) The disk drive must be turned on before the computer. Turn on the disk drive (the switch is located at the back right side of the drive).
- 3) Open the door of the drive by pressing in on the door. Insert the diskette with the exposed oval window inserted first and the label up.
- 4) Close the door on the disk drive.
- 5) Turn on the computer. You will see the words--  
  
      \*\*\*\*COMMODORE 64 BASIC V2\*\*\*\*  
      64K RAM SYSTEM 38911 BASIC BYTES FREE  
      READY.
- 6) Type LOAD "Ø:\*" , 8 and press the Return Key. The red light on the disk drive will come on. The computer will print--  
      "Searching for Ø  
      LOADING.  
      READY.
- 7) Type RUN.
- 8) If any time during the program you want to stop, hold the CTRL (Control) key and press the E key.

### Shutting Off The System

- 1) Remove the diskette.
- 2) Turn off the disk drive, computer and television.

"WHAT HAPPENS IF...?" -- SUNBURST COURSEWARE AND WARRANTY

- (1) What happens if a program will not load or run?  
Call us on our toll-free number and we will send you a new diskette.
- (2) What if I find an error in the program?  
We have thoroughly tested the programs that SUNBURST carries so we hope this does not happen. However, if you do find an error, please note what you did before the error occurred. Also, if a message appears on the screen, please write the message down. Then fill out the evaluation form or call us with the information. We will correct the error and send you a new diskette.
- (3) What happens if the courseware is accidentally destroyed?  
SUNBURST has a lifetime guarantee on its courseware. Send us the product that was damaged and we will send you a new one.
- (4) How do I stop a program in the middle to go on to something new?  
Hold the Control (CTRL) button down and press the E key. (If you have a TRS-80, hold the SHIFT key and the down-arrow key and press the E key.) If you want to use another diskette, select the END option to the menu.
- (5) Can I copy this courseware?  
The material on the diskette or cassette is copyrighted. You should not copy the courseware.